Amendments to the Claims

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

Claim 1. (currently amended) A photoresist comprising a photoactive component and a polymer that comprises: i) a heteroalicyclic group that does not contain a carbonyl ring member and is not an oxynorbornyl anhydride or lactone and is fused to the polymer backbone and that contains one or more oxygen or sulfur ring atoms; ii) a carbon alicyclic group fused to the polymer backbone; and iii) a photoacid-labile moiety.

Claim 2. (original) The photoresist of claim 1 wherein the heteroalicyclic group has an oxygen ring member.

Claim 3. (original) The photoresist of claim 1 wherein the heteroalicyclic group has a sulfur ring member.

Claim 4. (previously presented) The photoresist of claim 1 wherein the carbon alicyclic group is a polymerized norbornene group.

Claim 5. (previously presented) The photoresist of claim 1 wherein the heteroalicyclic group has a non-hydrogen ring substituent.

Claims 6-7. (cancelled)

Claim 8. (previously presented) The photoresist of claim 1 wherein the polymer comprises a polymerized acrylate that comprises a photoacid-labile group.

Claims 9-22. (cancelled)

Claim 23. (previously presented) The photoresist of claim 1 wherein the polymer is a tetrapolymer or pentapolymer.

Claim 24. (previously presented) The photoresist of claim 1 wherein the polymer is completely free of aromatic groups.

Claims 25-34. (cancelled)

Claim 35. (previously presented) A method of forming a positive photoresist relief image, comprising:

(a) applying a coating layer of a photoresist of claim 1 on a substrate; and

(b) exposing and developing the photoresist image to yield a relief image.

Claims 36-40. (cancelled)

Claim 41. (previously presented) An article of manufacture comprising a microelectronic wafer substrate or a flat panel display substrate having coated thereon a layer of a photoresist composition of claim 1.

Claims 42-45. (cancelled)

Claim 46. (previously presented) The photoresist of claim 1 wherein the photoacid-labile moiety is a substituent of the heteroalicyclic group or carbon alicyclic group.

Claim 47. (currently amended) The photoresist of claim 1 wherein the photoacid-labile moiety is a polymer unit distinct from the heteroalicyclic group and ~~of~~ carbon alicyclic group.

Claim 48. (previously presented) The photoresist of claim 1 wherein the polymer further comprises lactone or anhydride units.

Claim 49. (previously presented) The photoresist of claim 1 wherein the polymer further comprises polymerized maleic anhydride groups.

Claim 50. (previously presented) The photoresist of claim 1 wherein the heteroalicyclic group fused to the polymer backbone does not contain an unsaturated oxygen.

Claim 51. (previously presented) The photoresist of claim 1 wherein the heteroalicyclic group fused to the polymer backbone does not contain an unsaturated sulfur.

Claim 52. (currently amended) A photoresist comprising a photoactive component and a polymer that comprises: i) a heteroalicyclic group fused to the polymer backbone and that contains one or more oxygen ring members but does not contain an unsaturated oxygen and is not an oxynorbornyl; ii) a carbon alicyclic group fused to the polymer backbone; and iii) a photoacid-labile moiety.

Claim 53. (previously presented) The photoresist of claim 52 wherein the carbon alicyclic group is a polymerized norbornene group.

Claim 54. (previously presented) The photoresist of claim 52 wherein the photoacid-labile moiety is a substituent of the heteroalicyclic group or carbon alicyclic group.

Claim 55. (currently amended) The photoresist of claim 52 wherein the photoacid-labile moiety is a polymer unit distinct from the heteroalicyclic group and ~~of~~ carbon alicyclic group.

Claim 56. (previously presented) The photoresist of claim 52 wherein the polymer further comprises lactone or anhydride units.

Claim 57. (previously presented) The photoresist of claim 52 wherein the polymer further comprises polymerized maleic anhydride groups.

Claim 58. (previously presented) A method of forming a positive photoresist relief image, comprising:

(a) applying a coating layer of a photoresist of claim 52 on a substrate; and

(b) exposing and developing the photoresist image to yield a relief image.

Claim 59. (previously presented) The method of claim 58 wherein the photoresist layer is exposed with radiation having a wavelength of less than about 200 nm.

Claim 60. (previously presented) The method of claim 58 wherein the photoresist layer is exposed with radiation having a wavelength of about 193 nm.

Claim 61. (currently amended) The method of claim ~~35~~ 1 wherein the photoresist layer is exposed with radiation having a wavelength of less than about 200 nm.

Claim 62. (currently amended) The method of claim ~~35~~ 1 wherein the photoresist layer is exposed with radiation having a wavelength of about 193 nm.

Claim 63. (previously presented) An article of manufacture comprising a microelectronic wafer substrate having coated thereon a layer of the photoresist of claim 52.

Claim 64. (new) The photoresist composition of claim 1 wherein the polymer is at least substantially free of aromatic groups.

Claim 65. (new) The photoresist composition of claim 1 wherein the heteroalicyclic group that is not an anhydride or lactone.

Claim 66. (new) The photoresist composition of claim 1 wherein the heteroalicyclic group contains a single ring oxygen atom.

Claim 67. (new) The photoresist composition of claim 52 wherein the polymer is at least substantially free of aromatic groups.

Claim 68. (new) The photoresist composition of claim 52 wherein the heteroalicyclic group contains a single ring oxygen atom.

Claim 69. (new) A photoresist comprising a photoactive component and a polymer that comprises: i) a heteroalicyclic group that is not an anhydride or lactone and is fused to the polymer backbone and that contains one or more oxygen or sulfur ring atoms; ii) a carbon alicyclic group fused to the polymer backbone; and iii) a photoacid-labile moiety.